

DESCRIPTION OF A NEW SPECIES OF TIPHYS KOCH, A NEWLY RECORDED GENUS OF WATER MITE FROM CHINA (ACARI, HYDRACHNELLAE, PIONIDAE)

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Abstract A new species *Tiphys yichunensis* sp. nov. is described in the present paper. This is the first record of the genus *Tiphys* Koch , 1836 (Acari , Pionidae) from China.

Key words Water mites , Pionidae , *Tiphys* , new species , China.

There are about 28 species of *Tiphys* Koch , 1836 have been reported worldwide (Viets , 1987; Simmons , 1987; Tuzovskij , 2005). In this paper , one new species of the genus is described from China.

Holotype and paratypes are deposited in Institute of Entomology , Guizhou University , China. The measurements are given in μm . The abbreviations used in the description are as follows: A1, A2: antennal glandularia 1 and 2; AEG: anterior epimera group ($\text{Ep}^+ + \text{Ep}^-$) ; $\text{Ep}^- - \text{Ep}^+$: Epimeral - ; D1-D4: dorsoglandularia 1-4; E1-E4: epimeroglandularia 1-4; L1-L4: lateroglandularia 1-4; O1 , O2: ocularia 1 and 2; PEG: posterior epimera group ($\text{Ep}^+ + \text{Ep}^-$) ; P- -P- : palpal segments 1-5; 1- 4: venteroglandularia 1-4; -L-1- -L-6: the first leg segments 1-6; -L-1- -L-6: the second leg segments 1-6; -L-1- -L-6: the third leg segments 1-6; -L-1- -L-6: the fourth leg segments 1-6.

Genus *Tiphys* Koch , 1836 New record to China
Tiphys Koch , 1836: 19.

Type species : *Tiphys sagulatus* Koch , 1836.

Body soft , posterior apodemes of PEG short ; medial margins of Ep^+ well developed ; coxae in four groups in female but PEG usually fused medially in male ; openings for insertion of -Legs with large ventral condyles ; posteromedial setae of fourth coxae hair-like ; typically with three pairs of genital acetabula ; pregenital sclerite of male usually separated from remainder of genital field ; male without petiole ; -Legs exhibiting sexual dimorphism ; -Legs modified for spermatophore transfer and exhibiting slight sexual dimorphism ; -L-6 not bowed or , if slightly bowed , lacking a row of heavy , short , usually peg-like setae in the concave side ; peg-like seta at tip of P^- well developed ; palpal segments usually short and P^- without numerous heavy setae (Cook , 1974) .

Larva : see Smith , 1976 , p. 49.

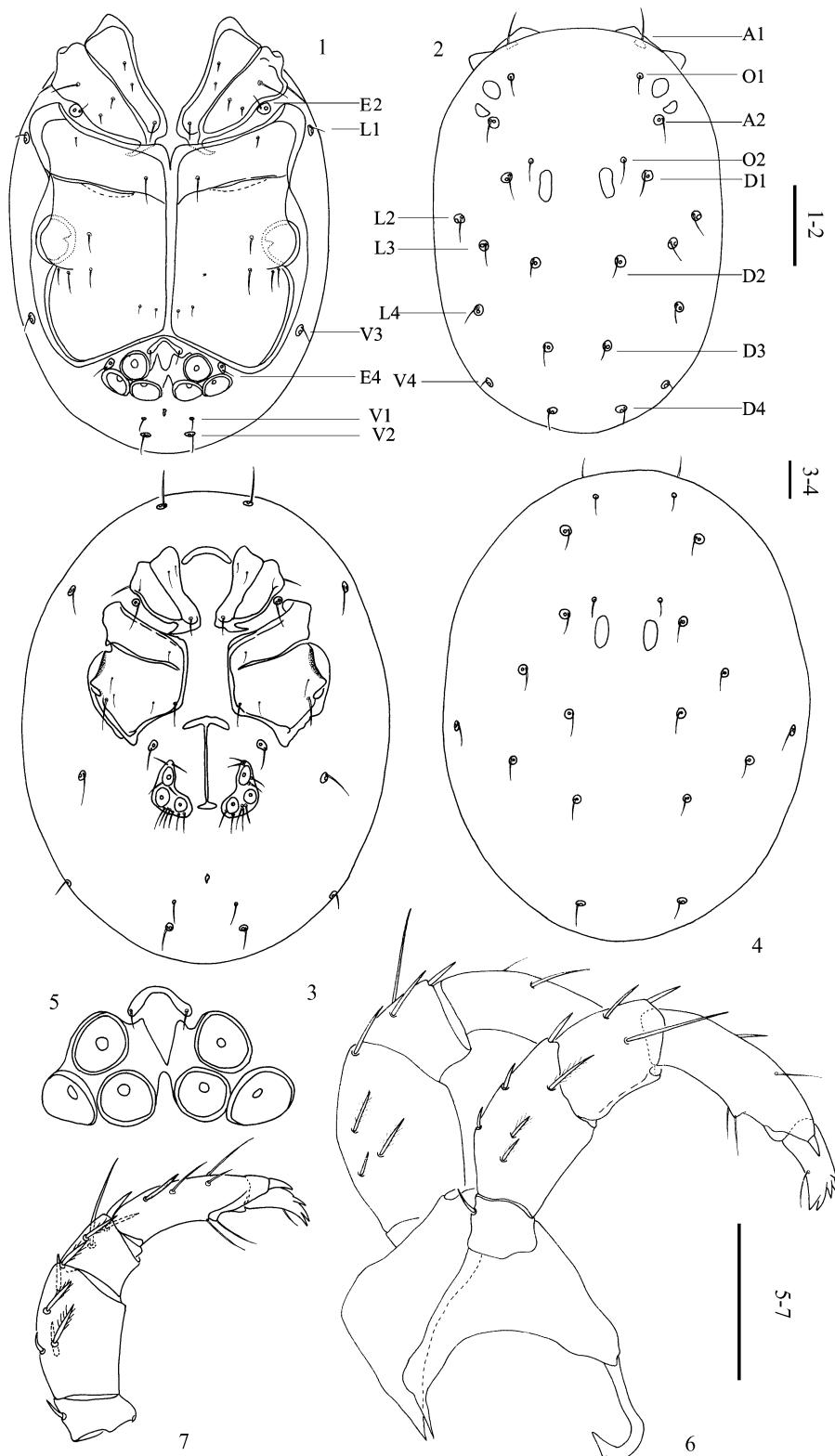
Tiphys yichunensis sp. nov. (Figs. 1-12)

Male. Idiosoma oval , 560 in length , 340 in width ; integument thin , with a pair of small sclerotized plates on dorsum ; distribution of glandularia and ocularia as shown in Figs. 1-2 ; coxae occupying most of ventral surface ; distance between anterior end of Ep^+ and posterior end of Ep^- 440 ; tips of Ep^+ and Ep^- beyond the anterior end of body ; first coxae group separated medially , apodemes of AEG short ; Ep^+ fused with one another posteromedially ; Ep^- fused along the whole medial edges ; E2 lying free in soft integument between Ep^+ and Ep^- ; E4 lying free in soft integument between Ep^- and genital field ; genital bay shallow ; three acetabula per side strictly paired ; genital field illustrated by Figure 1-E ; excretory pore posterior to genital field and anterior to V1 ; two pairs of setae near to post-median angle of Ep^- ; proportions and chaetotaxy of palp as shown in Fig. 7 ; one dorsal peg-like seta on P^- -I ; six dorsal setae on P^- -II , most of them pinnate ; five dorsal setae on P^- -III , one of them much longer than others ; one dorsal peg-like seta , several hair-like setae and two ventral setal tubercles with two long hair-like setae on P^- -IV ; spine-like seta (14 in length) and dorsomedial tubercle prominent ; claws in -L , -L and -L strictly paired , each claw with a ventral clawlet , as shown in Figs. 8-9 and 11 ; two claws of -L unpaired , one hook-like , as shown in Fig. 10 (arrow 'a') , another modified as shown in Fig. 10 (arrow 'b') ; segments of -L shorter than counterparts of other legs ; -L-4 expanded dorsoventrally and flattened laterally relative to -L-3 ; a row long and ventraflex setae on lateral-anterior margin , two row long setae on ventral margin and two setae on dorsal margin of -L-4 ; -L-4 and 5 jointing in ventral side of -L-4 , as shown in Fig. 12 (arrow 'c') ; -L-5 terminating in a heavy , auriform seta ; dorsal lengths of P^- to P^- : 25 , 84 , 43 , 99 , 46 ; dorsal lengths of -L-1 to 6 : 35 , 55 , 90 , 100 , 150 , 183 , that of -L-1 to

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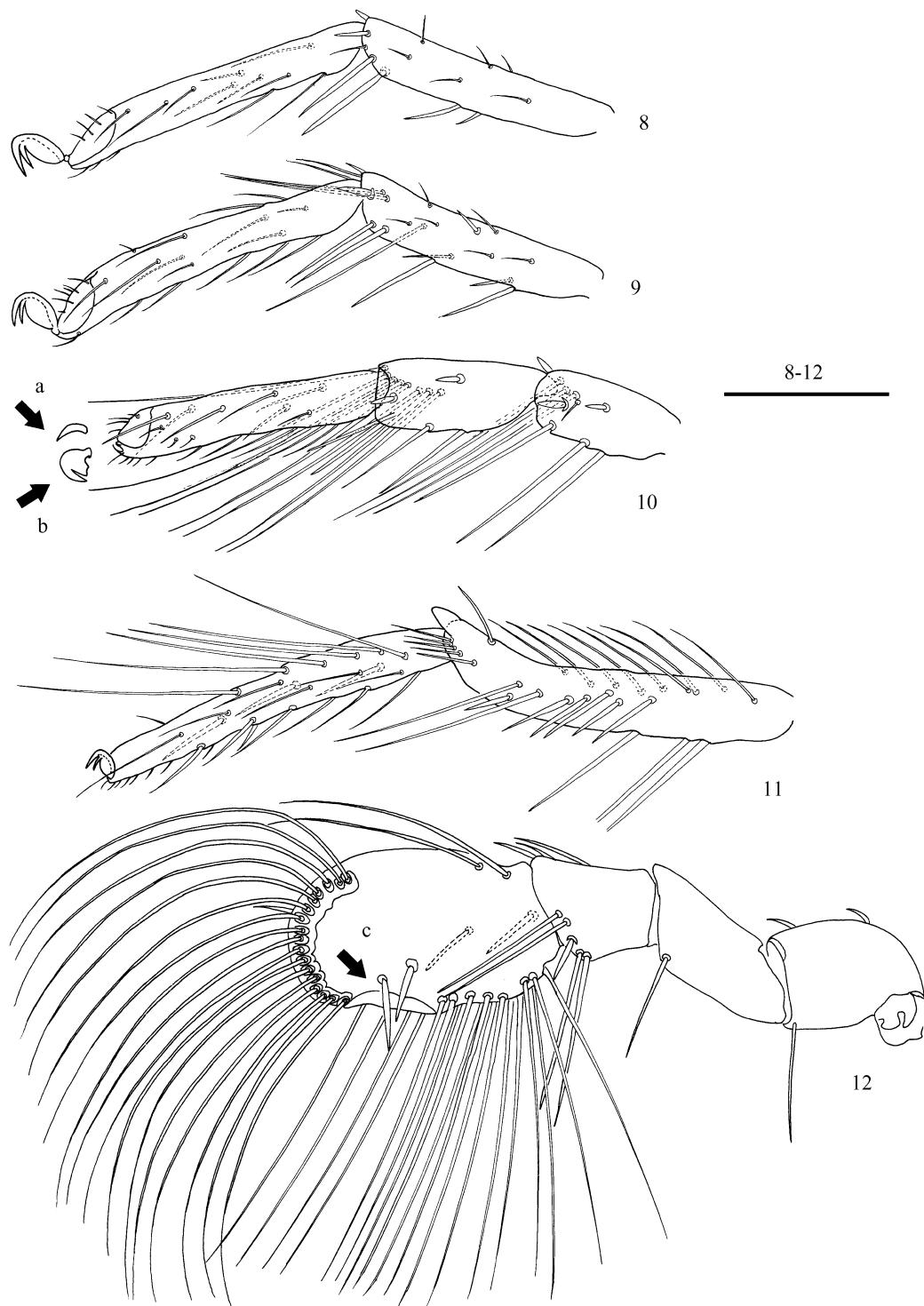
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Figs. 1-7. *Tiphs yichunensis* sp. nov. 1. Idiosoma, male, ventral view. 2. Idiosoma, male, dorsal view. 3. Idiosoma, female, ventral view. 4. Idiosoma, female, dorsal view. 5. Genital field, male. 6. Infracapitulum, female, lateral view. 7. Palp, male, lateral view. Scale bars = 100 μ m.

6: 35, 60, 105, 135, 160, 205, that of -L-1 to 6: 50, 60, 70, 75, 100, 155, that of -L-1 to 6: 75, 55, 60, 145, 200, 230, height of -L-4 100, ratio of length

to height of -L-4 1.45; -L-3 with two, -L-4 with three, -L-5 with eight, -L-4 with 37, -L-5 with two and -L-6 with six swimming hairs.



Figs. 8-12. Legs of *Tiphys yichunensis* sp. nov. , male. 8. -L-5 , 6. 9. -L-5 , 6. 10. -L-4 , 5 , 6. 11. -L-5 , 6. 12. -L-1 , 2 , 3 , 4. Scale bar = 100 μ m.

Female. Idiosoma larger than that of male , 1 230 in length , 830 in width ; capitulum and anchoral processes similar to those of male ; epimeral plates arranged in four groups ; length between anterior end of Ep 1 and posterior end of Ep 515 , posterior epimeral groups widely separated ; E1 located between Ep 1 and Ep

and near to posterior margin of Ep 1 ; E4 lying free in soft integument between Ep 1 and genital plates ; genital plates triangular with three pairs of acetabula ; palp morphology and chaetotaxy similar to those of male ; -L-4 and claws of -L unmodified ; dorsal lengths of P₁ to P₅ : 36 , 118 , 68 , 120 , 48 , spine-like seta on

distal dorsal end of P-14 in length, dorsal lengths of -L-1 to 6: 60, 130, 130, 205, 200, 205, that of -L-1 to 6: 65, 80, 135, 185, 205, 210, that of -L-1 to 6: 70, 90, 130, 190, 213, 220, that of -L-1 to 6: 120, 110, 170, 260, 263, 258; -L-4 with three, -L-5 with two, -L-3 with two, -L-4 with three, -L-5 with seven, -L-4 with four, -L-5 six swimming hairs.

Remarks. The new species closely resembles *T. scaurellus* Tuzovskij, 1983 from Russia, but can be distinguished by the following characters: a dorsal peg-like seta present on P-, which disappear in *Tiphys scaurellus*; the dorsoventral expanded degree in proximal of -L-4 is similar to that of distal, which is gradually strong from proximal to distal in *Tiphys scaurellus*; claws of

-L heteromorphic in male (as shown in Fig. 10 arrow 'a' and 'b'), one of them hook like without clawlet, another with a strong and modified ventral clawlet; claws of -L of male in *Tiphys scaurellus* with one to two slender ventral clawlet.

Holotype male, Hulan River, Yichun City, Heilongjiang Province, 19 Aug. 1996, leg. JIN Dao-Chao. Paratypes: two females and one nymph, the same data as the holotype. The holotype and one female were dissected and slide-mounted.

Etymology. The species is named after the Yichun City (Heilongjiang Province), where the type specimens were collected.

Habitat. River.

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中国软滑水螨一新纪录属及一新种记述(蜱螨亚纲, 水螨群, 软滑水螨科)

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摘要 记述了采自黑龙江省伊春市呼兰河的中国软滑水螨一新纪录属: 妖水螨属 *Tiphys* Koch, 1836, 及1新种: 伊春妖水螨 *Tiphys yichunensis* sp. nov.。新种与分布于俄罗斯的近疤妖水螨 *Tiphys scaurellus* Tuzovskij, 1983 近似, 区别在于: 新种 P-

关键词 水螨群, 软滑水螨科, 妖水螨属, 新纪录属, 新种.

中图分类号 Q959.226

背面起始端亚中部具1栓毛, 近疤妖水螨缺失; 新种足雄螨足 爪特化, 其中一爪为钩状简单爪, 另一爪中、基部膨大, 近疤妖水螨雄螨足 爪均具腹小爪; 新种雄螨 -L-4 近筒状, 近疤妖水螨雄螨 -L-4 从基部至端部逐渐膨大。

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